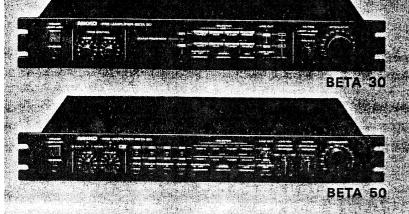


STEREO PREAMPLIFIER



TYPE AND VOLTAGE

W-TYPE : UL and CSA type	120 V AC
E-TYPE : NK-STD type	220 V AC
V-TYPE : Multi-Voltage type	110/120/220/240 V AC

SERVICE MANUAL

CONTENTS

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SPECIFICATIONS

Specifications are subject to change without notice.

Preamplifier Section	
Total Harmonic Distortion (at 1,000 Hz). Phono (MC) to Rec Out (at 7 V output):	Signal to Noise Ratio with IHF-A Network, Phono (MC): more than 62 dB Phono (MM): more than 82 dB Tuner: more than 90 dB Aux: more than 90 dB Tape 1, 2: more than 90 dB Frequency Response (20 to 20,000 Hz), Tuner: +0, -1 dB
Input Sensitivity (at 1,000 Hz, 1 V output), Phono (MC): 0.25 mV ± 2 dB Phono (MM):	Aux:
Input Impedance (at 1,000 Hz), 100 ± 10 ohms Phono (MC): 47 ± 5 kohms Tuner: 47 ± 10 kohms Aux: 47 ± 10 kohms Tape 1, 2: 47 ± 10 kohms	Tone Control, Bass (70 Hz): +7, -9 dB Treble (10 kHz):
General	
Power Requirement, U.S.A. & Canada model:	Dimensions, Width:

(BETA 50)

440 mm, 17-3/8" (BETA 50s)

BETA 50

Preamplifier Section

Total Harmonic Distortion (at 1,000 Hz).	Signal to Noise Ratio with IHF-A Network,
Phono (MC) to Rec Out (at 7 V output):	Phono (MC): more than 62 dB
no more than 0.006%	Phono (MM): more than 82 dB
Phono (MM) to Rec Out (at 7 V output):	Tuner: more than 90 dB
Aux to Pre Out (at 1.8 V output):	Aux:
Input Sensitivity (at 1,000 Hz, 1 V output),	Tuner: +0, -1 dB
Phono (MC): 0.25 mV ± 2 dB Phono (MM): 2.5 mV ± 2 dB Tuner: 150 mV ± 2 dB Aux: 150 mV ± 2 dB Input Impedance (at 1,000 Hz), Phono (MC): 100 ± 10 ohms	Aux: +0, -1 dB Tape 1, 2: +0, -1 dB RIAA Equalization Deviation (30 to 15,000 Hz), Phono (MM) to Rec Out: ±1 dB Tone Control,
Phono (MM):	Bass (70 Hz): +7, -9 dB Treble (10 kHz): +7, -9 dB
Aux:	CX*NR Input Level,
Tape 1, 2: 47 ± 10 kohms	Calibration VR Max:
	Muting Delay Time:
	\mathcal{X}_{i}
•	• Section 1997 and the section of th

Dimensions,

Width: 482 mm, 19"

Height: 70 mm, 2-3/4"

Depth: 258 mm, 10-1/8"

Weight without package: 4.8 kg, 10.6 lbs

Specifications are subject to change without notice.

U.S.A. & Canada model: AC 120V/60 Hz

European model: AC 220V/50 Hz

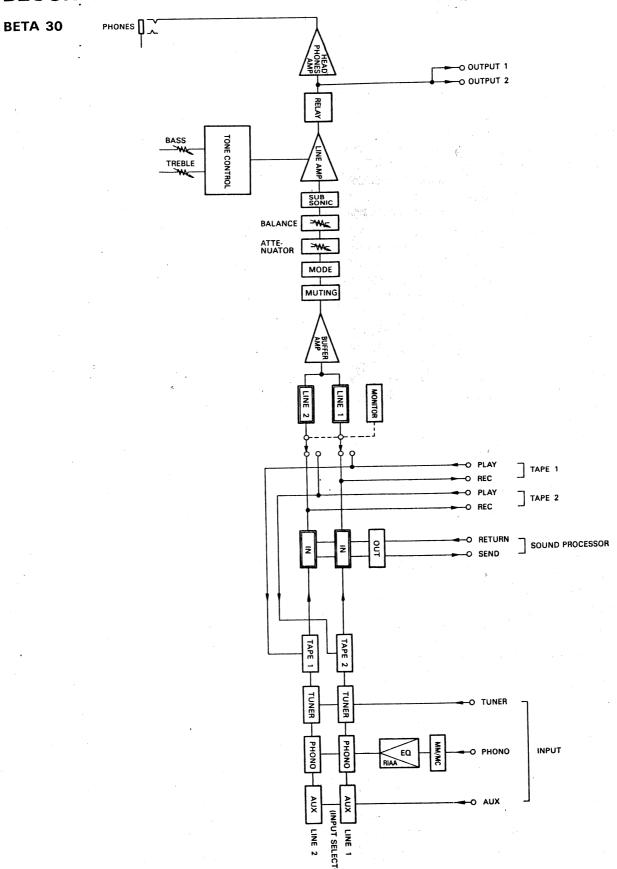
U.K. & Australia model: AC 240V/50 Hz

General

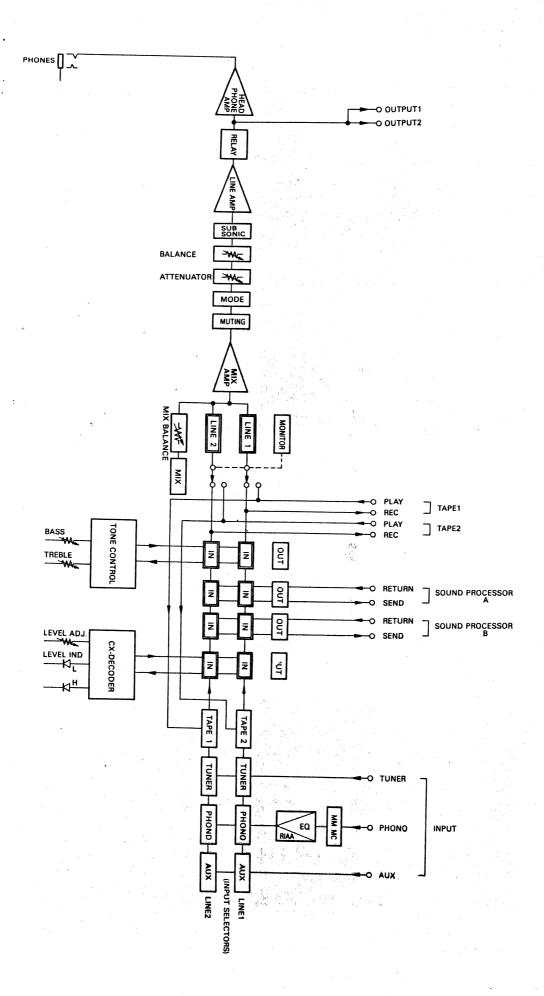
Power Requirement,

CX is a trademark of CBS Inc.

BLOCK DIAGRAM







DISASSEMBLY

1. CABINET COVER REMOVAL

- Remove four tapping screws from the top of the metal cover.
- b. Remove four screws from both sides of the metal cover.
- c. Lift the cabinet cover away from the unit.

2. BOTTOM PLATE REMOVAL

a. Remove seven tapping screws (#1 \sim 7) as shown in Photo 1.

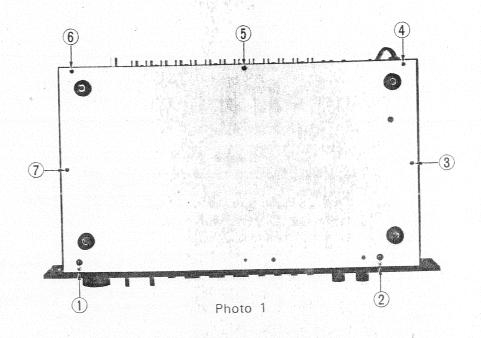
3. FRONT PANEL REMOVAL

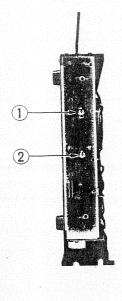
 Remove two (or one) knobs (#1, 2 Photo 2) from the front panel by pulling them forward.

- b. Using a hexagonal wrench, remove three knobs $(#3 \sim 5)$ as shown in Photo 2.
- c. Remove two tapping screws from the top of the unit.
- d. Remove the front panel from the unit.

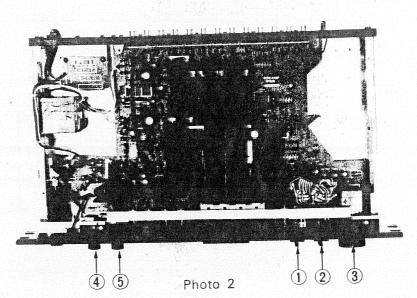
4. POWER TRANSFORMER REMOVAL

- a. Disconnect all wires from the power transformer.
- Remove two screws (#1, 2) (Photo 3) from the side plate of the unit.
- c. Lift the power transformer up and out of chassis.









PARTS LOCATION

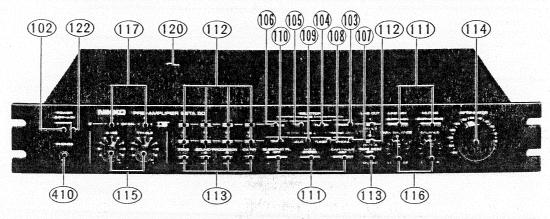
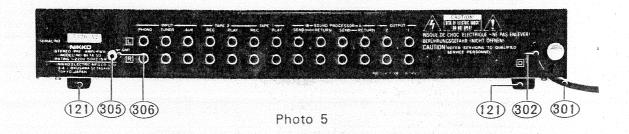


Photo 4



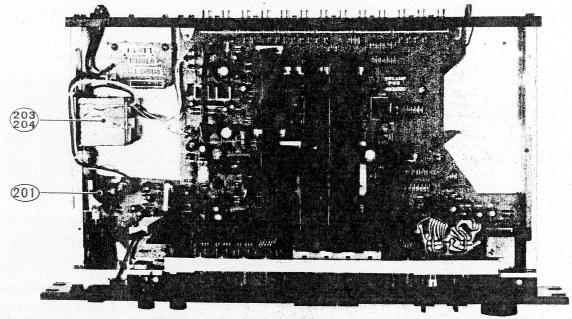


Photo 6

PARTS LIST

*103

*104

***** 105

*** 106**

***** 107

***** 108

***** 109

*110

*111a

*111b

The REF, NUMBER (#) marked with a (*) on parts list is related to number of three digits with a (). (Photo $4{\sim}6$).

Numberals in file indicate the quantity of parts used in one type.

W: U.S.A. & Canada model, AC 120V

E : European model, AC 220V V : Multi-voltage model, AC 110/120/220/240V

Transistor TR:

Field effect transistor FET: Volume control (Variable resistor) VR: MO-RES: Metal oxide film fixed resistor CEM-RES: Cemented wirewound fixed resistor

FP: Flame proof C-CAP: Ceramic capacitor

E-CAP: Aluminum electrolytic capacitor M-CAP: Polyester film capacitor

BP-CAP: LC-CAP: Biopolar electrolytic capacitor

Low current leakage electrolytic capacitor

4. Assemblies and parts are subject to change without notice.

5. Parts ordering procedure:

A. DO NOT USE THE "REFERENCE" number and "SYMBOL" number. (these are control # for the factory only)

B. Include in any order

a. Part number. b. Part description, c. Model number. (any of the above lacking from an order may delay shipment of that order.)

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

REF.	SYMBOL			DE		DESCRIPTION	PART
No.	No.		_		50s		No.
★112		4	4	10	10	Button, push - P309B-C - others, CLEAR	7853800
±113		2	2	5	5	Button, push - P309B-BK - others,	
						BLACK	7853810
				1		Knob - 2BK-34D - attenuator, BLACK	7851740
*114a *114b				_		Knob – 2SL-34D – attenuator, SILVER	7841880
*1140 *115a				1		Knob – 30BK-16R – bass/treble, BLACK	7841870
* 115b					1	Knob – 30SL-16R – bass/treble, SILVER	7841860
*116 *116					2	Knob - P2BK-1613DL - balance/	
# 110				-	-	(mix balance)	7852350
±117a			_	2		Knob - 30BK-5.5R - CX cal., BLACK	7841920
±117b		-		-		Knob - 30SL-5.5R - CX cal., SILVER	7841910
118		1	1	2	2	Shaft, extension - 16.5M	7405030
119				3		Shaft, extension — 63M	7403450
* 120		1	1	1	1	Cover, top	7821510
*121					4		7403520
*121		1		1		Guide, button P15S9BK power switch	7402680
- 144							

4550230	REF. SYMBOL. TYPE B30 B50 DESCRIPTION NO. NO. W E V W E V	PART NO.
	CHASSIS ASSEMBLY	
7886390	A 201a - U.S.A. & Canada NO	4042520 40418201
7886380	↑ 2018 × 1 1 1 Switch push power other type	239472A
7886410	A 202, 3 3 1 1 1 1 C-CAP 0.0047ut	
7886400	^ *203# 2 1 Trestormer power J 1 639 - AC 120V ↑ *203b - 1 J Transformer power T-1 640 - AC 120V	4106400
7852390	2035 Fig. 1 - AC 110/120/220/240V	1105420
	1 + 2048 - 1 - 2 - 3 - 4 - 4 - 3 - 7 tenstormer, power T-1-543 + AC 120V	1106430
7853930	1 + 2048 - 27 + 1 - Transformer, nower TJ-544 + AC 220V	1105440
	1 +2046 1 Transformer, power T 1 546 -	er 🔻 👬
7050000	THE PART HAVE HAVE DO NOT THE PART HAVE AN ADDRESS OF THE PART HAVE AND ADDRESS OF THE PART HAVE ADDRESS OF THE PART HAVE AND ADDRESS OF THE PART HAVE ADDRESS OF	7 1105460
7853820 7853830		
7853840	BACK PLATE ASSEMBLY	
7853860	1 +3018 - 1 - 1 1 - 1 Dord: power - DP-20 - U.S.A. type.	
, 000000	Caracle cype (for \$500 only) &	中心,由和
7853870	registry of tage 4y persons	606007A
7853880	↑ ±3016 1 2 4 4 4 4 Cord sower #SPT 2 Canada type	606008A
7853890	*3010 * 1 - 1 - Cord powers SEE-2T - Europe type	80061QA
7853850	302e 302e 3 4 4 4 4 2 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	178
	USA type & multi-voltage type	7400620
	A 2024 - 1 2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	7400890
	Canada & Europa type	4500190
7853690		4500280
		1.74
7050700	and the control of th	4530540
7853700	*305 1 1 1 1 1 Shaft, GND terminal	7152050
	*306 1 1 1 1 1 1 Nut, GND terminal	7152060
		more → P.16

	S-CAP: T-CAP:		ne film capacitor electrolytic capacitor	
REF.	SYMBOL	MODEL		PART
No.	No.	WE WE 3030s5050	DESCRIPTION s	No.
	PACKIN	IG MATER	IALS & ACCESSORIES	
001a		1	Carton box – BETA 30	9826740
001b		-1	Carton box - BETA 30s	9826770
001c		1-	Carton box - BETA 50	9826750
001d		1	Carton box - BETA 50s	9826780
002		2 2 2 2	Pad	9841230
003		1 1 1 1	Sack, polyethylen cloth	9640720
004a		1	-Manual, instructions - in English and	
			French - BETA 30	960429E
004b		11	Manual, instructions - in five different	
			languages - BETA 30/s	960429K
004c		1-	Manual, instructions - in English and	
			French - BETA 50	960430E
004d		11	Manual, instructions - in five different	
			languages - BETA 50/s	960430K
005		1 1 1 1	Manual, voltage selection — V-type only	960402K
900		1 - 1 -	Card, warranty – U.S.A. only	967046A
007		1 - 1 -		9690300
00.				
800		1 1 1 1	Cord, RCA phono pin plug	962026A
009		1 1 1 1		4550230
		CABINE	T ASSEMBLY	
4 4 0 4			- Front panel assembly - BETA 30	7886390
* 101a		1		7886380
≈ 101b		- 1 1 -	지하는 보다 아들이 되었다. 그리고 있는 것이 되었다. 그리고 있는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이다.	7886410
* 101c				7886400
* 101d		1	그리고 하다 하나 보다 그 아이들은 아이들이 되었다. 그 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은	7550400
* 102a		1 – 1 -	 Button, push — M15SQ-BK — power, BLACK 	7852390
* 102b		-1-		
- 1020			Datton, pastr - Wridad-at - power,	7057020

SILVER

phono 1

phono 2

BLACK

SILVER

1 1 1 1

1 1 1 1 Button, push - P819BK-PHON-1 -

1 1 1 1 Button, push - P819BK-PHON-2 -

1 1 1 1 Button, push - P819BK-TPE-1 - tape 1

4 - 5 - Button, push - P319W-BK - subsonic/

- 4 - 5 Button, push - P319W-SL - subsonic/

Button, push — P819BK-TUN-1 — tuner 1

Button, push - P819BK-AUX-1 - aux 1

Button, push - P819BK-TPE-2 - tape 2

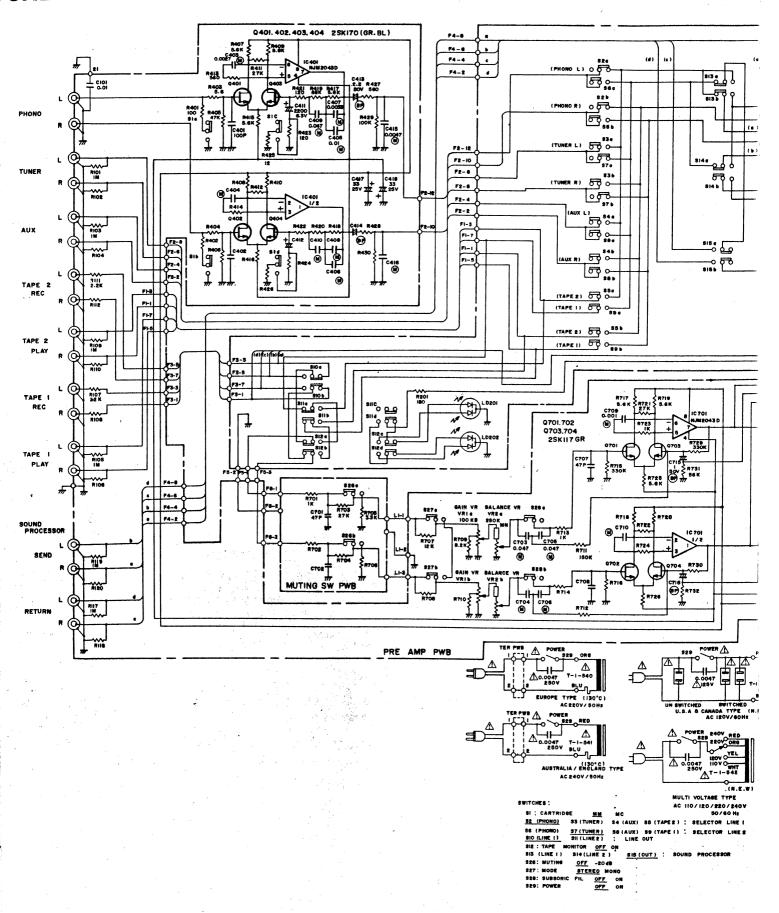
Button, push - P819BK-TUN-2 - tuner 2

Button, push - P819BK-AUX-2 - aux 2

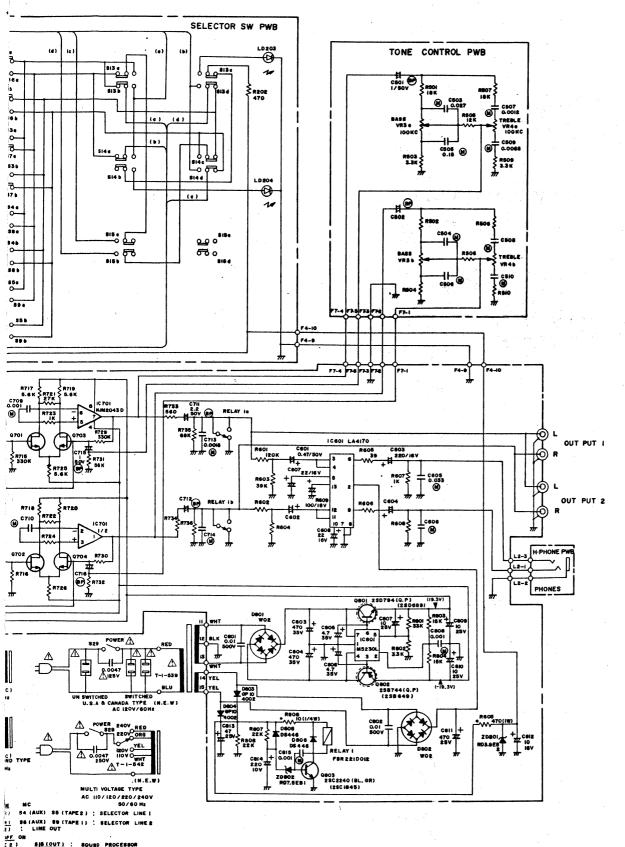
mode/cartridge/muting/(line mix) -

 ${\sf mode/cartridge/muting/(line\ mix)}\ -$

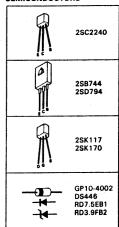
CHEMATIC DIAGRAM BETA 30



20 dB 2 MONO FF ON



SEMICONDUCTORS



NOTES:

SCHEMATIC IS SUBJECT TO CHANGE WITHOUT NOTICE.

INLESS OTHERWISE SPECIFIED

- UNLESS OTHERWISE SPECIFIED:
 2. RESISTANCE VALUES ARE IN OHMS.
 K-1,000: M-1,000,000

 3. CAPACITANCE VALUES IO AND ABOVE
 ARE IN OR IF IP-PF M-FF, LESS
 ARE IN OR ARE IN JF. IELECTROLYTIC
 CAPACITANCE VALUES ARE IN AFMVI
 4. VOLTAGES ARE MEASURED TO CHASSIS
 GROUND WITH A "DC VOLTMETER".

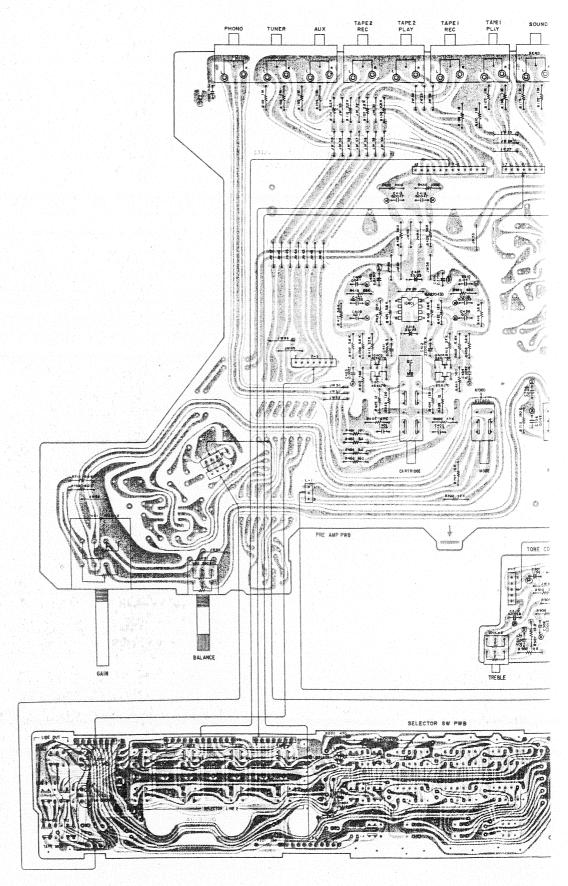
M POLYESTER FILM CAPACITOR (NO MARK) CERAMIC CAPACITOR • NONFLAMMABLE RESISTOR

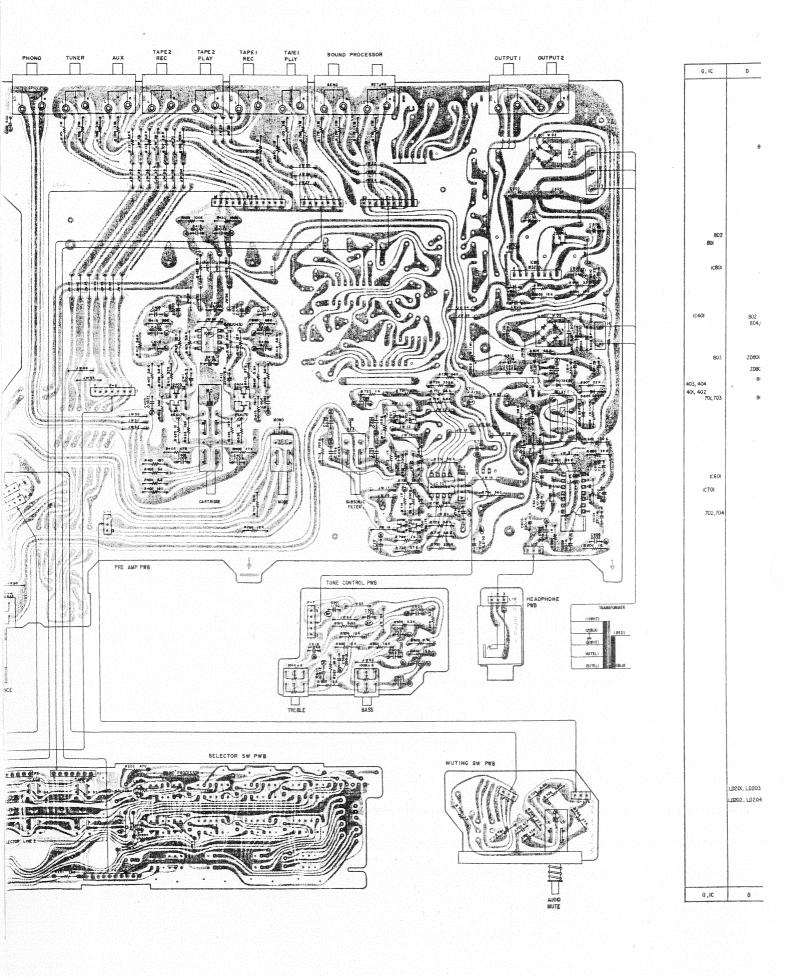
SERVICE INFORMATION:

CAUTION: REFER SERVICING TO QUALI-FIED SERVICE PERSONNEL.

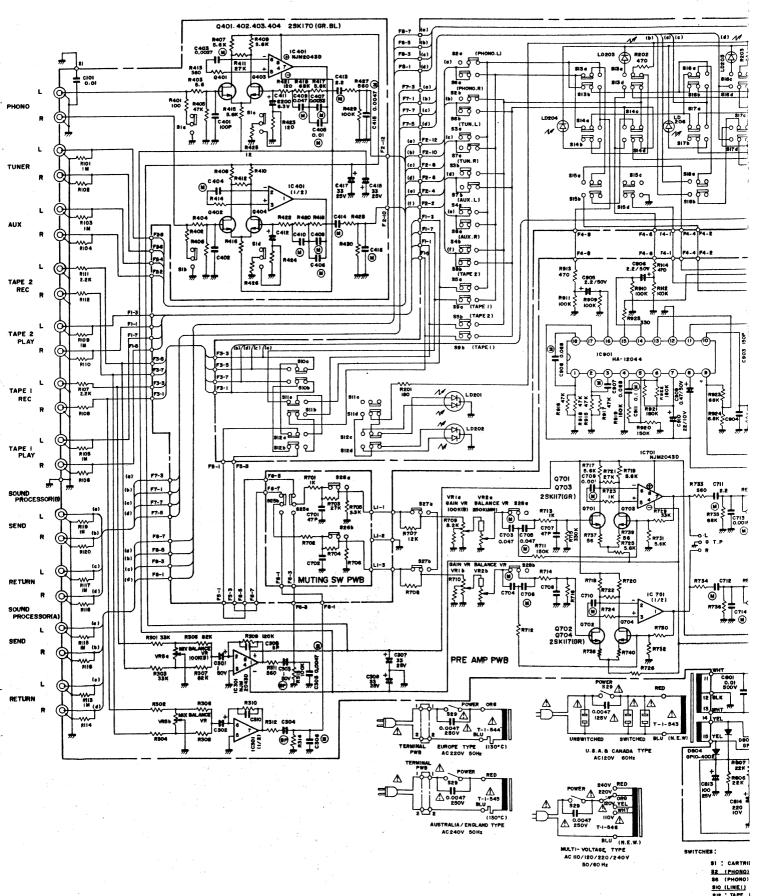
- EACH PRECAUTION TO BE FOLLOWED DURING SERVICING.
- DUNING SERVICIAN SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
- BEFORE RETURNING THIS APPLIANCE
 TO THE CUSTOMER, YOU MAKE LEAKAGE-CURRENT OR RESISTANCE MEASURMENTS TO DETERMINE THAT EXPOSED
 PARTS ARE ACCEPTABLY INSULATED
 FROM THE SUPPLY CIRCUIT.

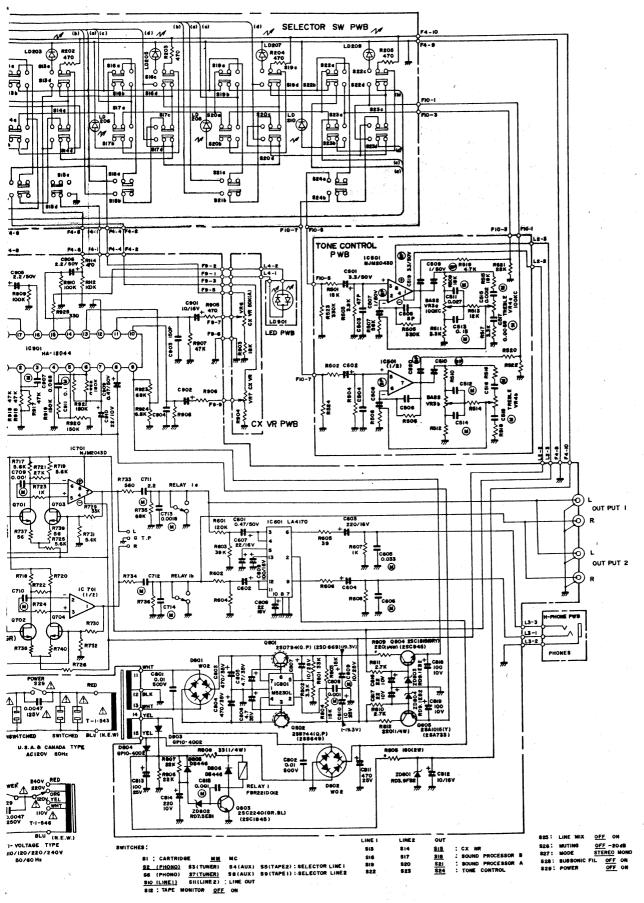
P. C. BOARD (CONDUCTIVE SIDE VIEW)



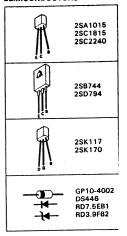


SCHEMATIC DIAGRAM BETA 50





SEMICONDUCTÓRS



SCHEMATIC IS SUBJECT TO CHANGE WITHOUT NOTICE.

RESISTANCE VALUES ARE IN OHMS K-1,000; M-1,000,000

K+1,000; M+1,000,000

CAPACITANCE VALUES IO AND ABOVI
ARE IN pf OR pf (P-pf, M-pf), LES
THAN 1.0 ARE IN pf. RELECTROLYTH
CAPACITANCE VALUES ARE IN pf.MV
VOLTAGES ARE MEASURED TO CHASSI
GROUND WITH A "DC VOLTMETER"

HEMATIC SYMBOLS:

SCHEMATIC SYMBOLS:

(M) POLYESTER FILM CAPACITOR
(NO MARK) CERAMIC CAPACITOR

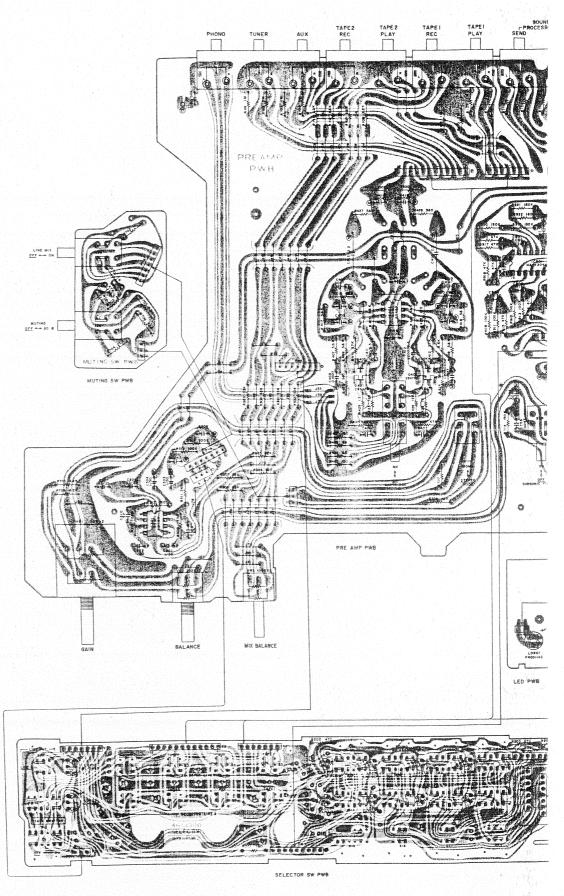
• NONFLAMMABLE RESISTOR

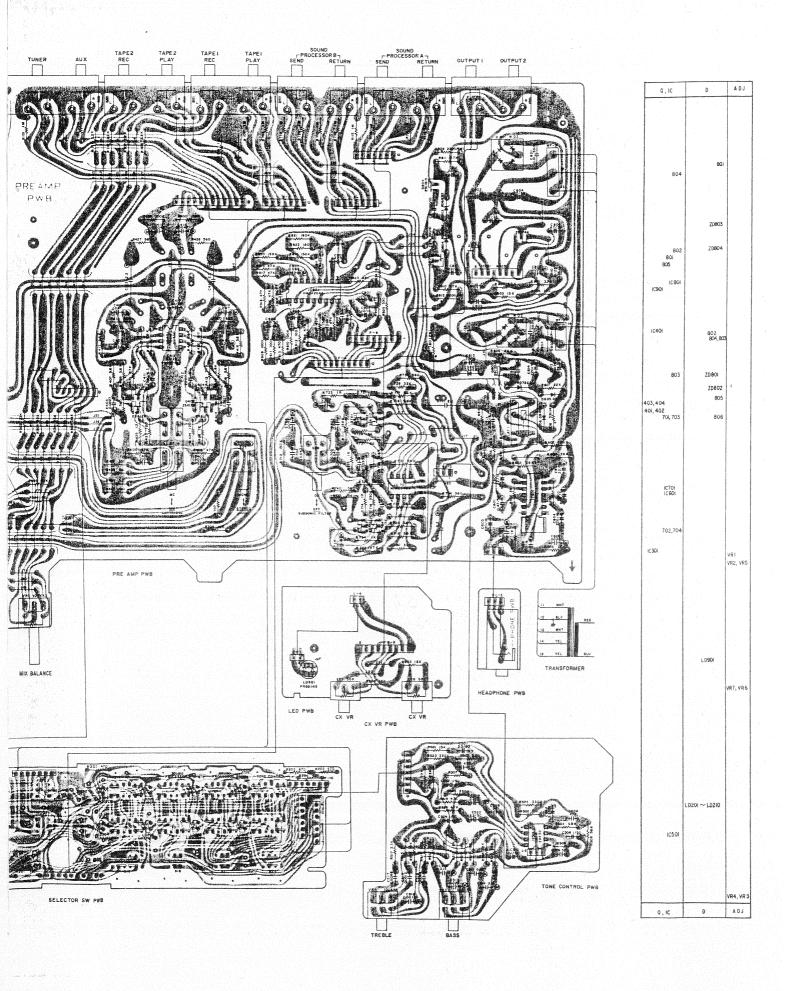
- GAUTION: REFER SERVICING TO QUALI-FIED SERVICE PERSONNEL.

 1. EACH PREGAUTION TO BE FOLLOWELDURING SERVICING.
- MINDICATES SAFETY CRITICAL
 COMPONENTS FOR CONTINUED SAFETY
 REPLACE SAFETY CRITICAL COMPC
 NENTS ONLY WITH MANUFACTURER'
 RECOMMENDED PARTS. RECOMMENDED PARTS.

 BEFORE RETURNING THIS APPLIANC!
 TO THE CUSTOMER, YOU MAKE LEAK
 AGE-CURRENT OR RESISTANCE MEASUR
 MENTS TO DETERMINE THAT EXPOSE!
 PARTS ARE ACCEPTABLY INSULATE!
 FROM THE SUPPLY CIRCUIT.

P. C. BOARD (CONDUCTIVE SIDE VIEW)





•	ıda	in

	• .,	DESCRIPTION ++	1		
No.	No.	WEV	No.	No.	
	BETA 30	PREAMPLIFIER PWB ASSEMBLY			
		(TONE CONTROL SECTION)	1		
				1	
401	VR3, 4	2 2 2 VR 100kohm (C) x 2 - bass/treble	4321430		
	C501,502	2 2 2 BP-CAP 1uf 50V	215510N	1	
	C503,504	2 2 2 M-CAP 0.027uf 5% 50V	222273J		
	C505,506	2 2 2 M-CAP 0.15uf 5% 50V	222154J		
	C507,508	2 2 2 M-CAP 0.0012uf 5% 50V	222122J		
	C509,510	2 2 2 M-CAP 0.0068uf 5% 50V	222682J		
	R501,502	2 2 2 RES 18kohm 5% 1/4W	328183J		
	R503,504	2 2 2 RES 3.3kohm 5% ¼W	328332J	1	
	R505,506	2 2 2 RES 12kohm 5% ¼W	328123J	i	
	R507,508	2 2 2 RES 18kohm 5% ¼W	328183J		
	R509,510	2 2 2 RES 3.3kohm 5% ¼W	328332J		
	11303,310	2 2 2 11CO 0.5KOIIII 530 244	3203323	ì	
		(TONE AMP SECTION)		1	
	IC701	1 1 1 IC NJM2043D	518220S		
	Q701~704	4 4 4 FET 2SK117 (GR)	516048S	408	
	Q/01 - /Q4	4 4 4 FET 23KTT/ (GR)	5100465	409	
	C707,708	2 2 2 C-CAP 47pf 10% 50V SL	232470K		
	C709,710	2 2 2 M-CAP 0.001uf 5% 50V	222102J		
	C711,712	2 2 2 BP-CAP 2.2uf 50V	215512N		
	C713,714	2 2 2 M-CAP 0.0018uf 5% 50V	222182J	1	
	C715,716	2 2 2 BP-CAP 1uf 50V	215510N	-	
	R713,714	2 2 2 RES 1kohm 5% ¼W	328102J		
	R715,716	2 2 2 RES 330kohm 5% 1/4W	328334J		
	R717~720	4 4 4 RES 5.6kohm 5% ¼W	328562J	±410	
	R712,722	2 2 2 RES 27kohm 5% ¼W	328273J		
	R723,724	2 2 2 RES 1kohm 5% ¼W	328102J		
	R725,726	2 2 2 RES 5.6kohm 5% ¼W			
			328562J		
	R729,730	2 2 2 RES 330kohm 5% ¼W	328334J		
	R731,732	2 2 2 RES 56kohm 5% ¼W	328563J		
	R733,734	2 2 2 RES 560ohm 5% %W	328561J		
		(PUSH SWITCH SECTION)			
402	S1	1 1 1 Switch, mono push — cartridge selector	4042600		
403	S26	1 1 Switch, mono push – muting	4042580	1	
405	S27,28	2 2 2 Switch, mono push – mode/subsonic	4042590		
	52.,25		4042550		
		(TERMINAL SECTION)			
406 407		1 1 Terminal, RCA phono pin jack – 2P x 3 4 4 4 Terminal, RCA phono pin jack – 2P x 2	4446050 4444120	411	
			,,,,,,,,		
		6 6 6 RES 1meg.ohm 5% 1/4W	328105J		
	R107,108	2 2 2 RES 2.2kohm 5% ¼W	328222J		
	R109,110	2 2 2 RES 1meg.ohm 5% 4W	328105J		
	R111,112	2 2 2 RES 2.2kohm 5% ¼W	328222J		
		(EQ AMP SECTION)			
	IC401	1 1 1 IC NJM2043D	5182205		
	Q401~404	4 4 4 FET 2SK170 (GR or BL)	5160398	1	
	C101	1 1 1 C-CAP 0.01uf +80, -20% 50V YG	231103Z	1	
	C401,402	2 2 2 C-CAP 100pf 10% 50V SL	232101K		
	C403,404	2 2 2 M CAP 0.0012uf 5% 50V	222122J		
	C405,406	2 2 2 M-CAP 0.01uf 5% 50V	222103J		
	C407,408	2 2 2 M-CAP 0.0033uf 5% 50V	222332J		
	C407,408 C409,410		1		
			222473J	1	
	C411,412	2 2 2 E-CAP 2200uf 6.3V	2110428	1	
	C413,414	2 2 2 BP-CAP 2.2uf 50V	215512N		
	C415,416	2 2 2 M-CAP 0.0047uf 5% 50V	222472J	- 1	
	C417,418	2 2 2 E-CAP 33uf 25V	2113235		
	R401,402	2 2 2 RES 100ohm 5% ¼W	328101J	1	

REF.	SYMBOL	TYPE +	PTION ++	PART	PA
No.	No.	W E V	TION	No.	
			50V 1/1M	328473J	328
	R405,406	2 2 2 RES 47kohm	5% ¼W	1	
	R407~410	10 10 10 RES 5.6kohm	5% ¼W	328562J	328
	R411,412	2 2 2 RES 27kohm	5% ¼W	328273J	328
	R413,414	2 2 2 RES 150ohm	5% ¼W	328151J	328
		4 4 4 RES 5.6kohm	5% ¼W	328562J	328
				328683J	,20
	R419,420	2 2 2 RES 68kohm	5% ¼W	l l	
1	R421~424	4 4 4 RES 120ohm	5% ¼W	328121J	
	R425,426	2 2 2 RES 12ohm	5% ¼W	328120J	
	R427,428		5% ¼W	328561J	
				1	****
	R429,430	2 2 2 RES 100kohm	5% ¼W	328104J	5182
		(MUTING SECTION)			5131 511
	C701,702	2 2 2 C-CAP 47pf 109	6 50V SL	232470K	
			may 1/11/	2201021	i600
	R701,702	2 2 2 RES 1kohm	5% ¼W	328102J	
	R703,704	2 2 2 RES 27kohm	5% ¼W	328273J	i 021
	•		5% ¼W	328332J	
	R705,706	2 2 2 RES 3.3kohm	370 /444	3200020	100
				1	2381
		(VOLUME CONTROL S	ECTION)	. [:114
		*		1	!114
100	VD4	1 1 1 VD 1000-1 /D1	2	4390180	?113
108	VR1	1 1 1 VR 100kohm (B) x		1	
109	VR2	1 1 1 VR 250kohm (MN)		4321440	!221
				į.	₹113
	0700- 700	A A A M CAR 0.047-14	5% 50V	222473J	!113
	C703~706	4 4 4 M-CAP 0.047uf	J /U JU V		
					(1112
	R707,708	2 2 2 RES 12kohm	5% ¼W	328123J	1
		2 2 2 RES 8.2kohm	5% ¼W	328822J	1283
	R709,710			I	
	R711,712	2 2 2 RES 150kohm	5% ¼W	328154J	1283
				1	1281
		(HEADPHONE AMP SEC	CTION)		1621
10		1 1 1 Jack, headphones		4550360	_
				5400000	
	IC601	1 1 1 IC LA4170		518089S	1
					1310
	C601,602	2 2 2 E-CAP 0.47uf	50V	211505S	
			16V	2112325	060
	C603,604			222333J	,
	C605,606	2 2 2 M-CAP 0.033uf		1	
	C607,608	2 2 2 E-CAP 22uf	16V	2112228	281
	C609	1 1 1 E-CAP 100uf	16V.	2112305	
	0000	1 1 1 2 27 11 122 11		ŀ	1
	R601,602	2 2 2 RES 120kohm	5% ¼W	328124J	
	R603,604	2 2 2 RES 39kohm	5% ¼W	328393J	
	R605,606	. 2 2 2 RES 39ohm	5% ¼W	328390J	ž.
	R607,608	2 2 2 RES 1kohm	5% ¼W	328102J	
		(RELAY DRIVE SECTION	ON)		
	DEL 43/4	4 4 4 D-(E0D221D01	2	1700490	-042 -042
411	RELAY1	1 1 1 Relay - FBR221D01	2	1700480	042
			DII	6121026	
	Q803	1 1 1 TR 2SC2240 (GR	or RF)	5121025	042
	D803,804	2 2 2 Diode GP10-4002		560066S	060
		2 2 2 Diode DS446		501028S	060
	5555,500	E E E DIOUG DOTTO			
	ZD802	1 1 1 Zener diode RD7.5EE	31	502062S	281
					284
	C813	1 1 1 E-CAP 47uf 25V		211325S	
	C814	1 1 1 E-CAP 220uf 10V		2111325	
		• • • • •		222102J	
	C815	1 1 1 M-CAP 0.001uf	5% 50V	222 1023	
	R806 807	2 2 2 RES 22kohm	5% ¼W	328223J	
			5% %W	328100L	4 L
	R808	1 1 1 FF-NES 100NM	370 7499	520,002	Į.,
		(DEOLU ATÓD 0505101	м .		11
		(REGULATOR SECTION	w)		1
				. I.	-
				F10001C	
	IC801	1 1 1 IC M5230L		518221S	
	IC801	1 1 1 IC M5230L		5182215	
	Q801	1 1 1 TR 2SD794 (Q c		5131315	
	Q801	1 1 1 TR 2SD794 (Q c		5131315	*
	Q801 Q802	1 1 1 TR 2SD794 (Q c		513131S 511127S	· ·
	Q801 Q802	1 1 1 TR 2SD794 (Q c		5131315	
	Q801 Q802 D801,802	1 1 1 TR 2SD794 (Q c	or P)	513131S 511127S	

BETA 30/30s·50/50s

PARTS ORDERING PROCEDURE ----- DO NOT USE THE "REFERENCE" number and "SYMBOL" number. (these are control # for the factory only). Include in any order:

a. Part number b. Part description c. Model number. (any of the above lacking from an order may delay shipment of that order.)

No. 328222J 328105J

518220S 516039S 231103Z 232101K 222122J 222103J 222332J 222473J 211042S 285225K 222472J 211323S 328101J 328568J 328473J 328562J 328273J 328151J 328562J 328683J 328121J 328120J 328561J 328104J

232470K 328102J 328273J 328332J

4390180 4321440 518220S 516048S 222473J 232470K 222102J 285225K 222182J 328822J 328154J 328102J 328334J 328562J 328273J 328102J 328562J 328333J 328562J 328561J 328683J 328560J

DESCRIPTION** No.	5% 5%	%W %W	
C803,804 2 2 2 E-CAP 4704f 35V 2114355 C808,806 2 2 2 E-CAP 4704f 35V 2114355 C809 C809 1 1 1 E-CAP 1004f 25V 2113205 C809,810 2 2 2 E-CAP 4704f 25V 2113205 C809,810 2 2 2 E-CAP 4704f 25V 2113205 C812 1 1 1 E-S 33kohm 5% WW 3283331 C802 1 1 1 RES 33kohm 5% WW 3283331 C802 2 2 RES 18kohm 5% WW 3283332 C803 C804 2 2 2 RES 18kohm 5% WW 3283332 C804 2 2 2 RES 18kohm 5% WW 3283332 C804 WW 2283332 C804 WW WW WW WW WW WW WW			
C803,804 2 2 2 E.CAP 470df 35V 2114355 C806,806 2 2 2 E.CAP 4.70df 35V 2114155 C807 1 1 1 E.CAP 100df 25V 2113205 C808,810 2 2 2 E.CAP 4.70df 25V 2113205 C811 1 1 1 E.CAP 100df 25V 2113205 C812 1 1 1 E.CAP 100df 25V 2113205 C812 1 1 1 E.CAP 100df 25V 2113205 C812 1 1 1 E.CAP 100df 16V 2112205 C812 1 1 1 E.CAP 100df 16V 2112205 C812 1 1 1 E.S. 33kohm 5% 2283333 C802 1 1 1 RES 33kohm 5% 2283333 C802 1 1 1 RES 33kohm 5% 2283333 C802 1 1 1 RES 33kohm 5% 2283333 C802 2 2 RES 18kohm 5% 2283333 C802 2 2 RES 18kohm 5% 228333 C803,804 2 2 2 RES 18kohm 6% 288333 C803,804 2 2 2 RES 18kohm C803,804 C803,80	5%	1/4 W	
C809, 806			
CROPT			
C808 1 1 1 M-CAP 0,001uf 5% 50V 22102U C808,810 2 2 2 ECAP 10uf 25V 211320S C811 1 1 ECAP 470uf 25V 211320S C812 1 1 ECAP 10uf 16V 211220S C812 1 1 ECAP 10uf 16V 211220S C813 1 1 ECAP 10uf 16V 211220S C813 1 1 ES 33kohm 5% 10 10 288333U C813			
C809 810			
C811			
R801 1 1 1 RES 33chm 5% WW 328332J R803,804 2 2 2 RES 18chm 5% WW 328332J R803,804 2 2 2 RES 18chm 5% WW 328332J R805,804 2 2 2 RES 18chm 5% WW 328332J R805,804 2 2 2 RES 18chm 5% WW 328332J R805,804 2 2 2 RES 18chm 5% WW 328332J R805,804 2 2 2 RES 18chm 5% WW 328332J R805,804 2 R805,804 R8			
R801			
R801	a or BI	١.	
R803 804 2 2 2 RES 18kohm	1 01 01	,	
R803,804 2 2 RES IBshohm 5% W 361471L C401400 2 2 2 CACP 1000f 1 C407408 2 2 CACP 1000f 1 C407408 2 2 CACP 1000f C407408 2 2 CACP C400140 C407408 2 2 CACP C407408 C407408 2 2 CACP C407408 C40740	ພາ ວດເ	% 50V YG	
BETA 30/s: SELECTOR PWB ASSEMBLY Selector			
BETA 30/s: SELECTOR PWB ASSEMBLY C407,408 2 2 MCAP 0.014	5%	50V	
BETA 30/s: SELECTOR PWB ASSEMBLY 501 S2~S9 2 2 2 Switch, tetra push — input selector	5%	50V	
BETA 30/s: SELECTOR PWB ASSEMBLY 507 SI 310-S12	5%	50V	
S2	5%	50V	
S2~S9	6.3V		
S10-S12 1 1 Switch, tri push - linie out selector 4042550 C415,416 2 2 2 MCAP 0.0047uf	10%	250V	
S13		50V	
D201,202 2 2 2 LED GL-5ND5 - red and green 5060790 R401,402 2 2 2 RES 1000hm R405,406 2 2 2 RES 6.60hm R405,406 2 2 2 RES 6.60hm R405,406 2 2 2 RES 6.60hm R405,406 2 2 2 RES 7.60hm R411,412 2 2 RES 7.60hm R41	25V		
Result			
Beta Boys Beta Beta Boys Beta Boys Beta Boys Beta Boys Beta Beta Boys Beta	5%	¼W	
R201 1 1 1 RES 180ohm 5% ¼W 328181J R202 1 1 1 RES 470ohm 5% ¼W 328181J R202 1 1 1 RES 470ohm 5% ¼W 328471J R202 1 1 1 RES 470ohm 5% ¼W 328471J R202 1 1 1 RES 470ohm 5% ¼W 328471J R202 1 1 1 RES 470ohm 5% ¼W 328471J R202 1 RES 27kohm R411,412 2 2 RES 27kohm R413,414 2 2 2 RES 27kohm R413,414 2 2 2 RES 68kohm R419,420 2 2 RES 68kohm R419,420 2 2 RES 68kohm R419,420 2 2 RES 68kohm R421-424 4 4 4 RES 120ohm R427,428 2 2 RES 68kohm R429,430 2 2 2 RES 120ohm R429,430 2 2 2 RES 100ohm R429,430 2 2 2 RES 10ohm R429,430 2 2 2 RES 100ohm R429,430 2 RES 100ohm R429,430 2 RES 100ohm R429,430 2 RES 100ohm R429,430 2 RES 100ohm R42	5%	%W	
R201 1 1 1 RES 180ohm 5% ¼W 328181J R202 1 1 1 1 RES 470ohm 5% ¼W 328181J R202 1 1 1 1 RES 470ohm 5% ¼W 328181J R203 1 1 1 RES 470ohm 5% ¼W 328181J R204 1 1 1 RES 470ohm 5% ¼W 328181J R205 1 1 1 1 RES 470ohm 5% ¼W 328181J R206 1 1 1 1 RES 470ohm 5% ¼W 328181J R207 1 1 1 RES 470ohm 5% ¼W 328181J R208 1 1 1 RES 470ohm 6% ¼W 328181J R209 1 RES 5.6kohm 6419,420 2 2 2 RES 150ohm R419,420 2 2 2 RES 150ohm R425,426 2 2 2 RES 150ohm R425,426 2 2 2 RES 120ohm R425,426 2 2 2 RES 120ohm R429,430 2 2 2 RES 100kohm R	5%	%W	
R202 1 1 1 RES 470ohm 5% ½W 328471J R411,412 2 2 2 RES 150ohm R413,414 2 2 2 2 RES 150ohm R413,414 2 2 2 2 RES 150ohm R413,414 4 4 RES 150ohm R419,420 2 2 2 RES 150ohm R419,420 2 2 2 RES 150ohm R419,420 2 2 2 RES 150ohm R425,426 2 2 2 RES 150ohm R425,426 2 2 2 RES 120ohm R429,430 2 2 2 RES 100kohm	5%	%W	
BETA 50/s: PREAMPLIFIER PWB ASSEMBLY (TONE CONTROL SECTION) 401 VR3, 4 2 2 2 VR 100kohm (C) x 2 - bass/treble 4321430 1C501 1 1 1 1 IC NJM2043D 518220S C501,502 2 2 2 E-CAP 3.3uf 50V 211513S C503,504 2 2 2 C-CAP 47pf 10% 50V SL 232470K C505,506 2 2 2 C-CAP 50f 50V SL 232470K C505,506 2 2 2 C-CAP 50f 50V SL 232509D R705,706 2 2 2 RES 3.8kohm C511,512 2 2 M-CAP 0.012uf 5% 50V 222154J C513,514 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C517,518 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C517,518 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C517,518 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C517,518 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222682J M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C515,516 2 2 2 RES 15kohm 5% WW 328183J C700,700 4 4 4 FET 25K117 (6f M-CAP 0.0014uf M-CAP 0.001	5% 5%	%W	
BETA 50/s: PREAMPLIFIER PWB ASSEMBLY (TONE CONTROL SECTION) (TONE CONTROL SECTION) 401 VR3,4 2 2 2 VR 100kohm (C) x 2 - bass/treble 4321430 (C501 502 2 2 2 E-CAP 3.3uf 50V 211513S C503,504 2 2 2 C-CAP 47pf 10% 50V SL 232470K R703,704 2 2 2 RES 160kohm R703,704 2 2 2 RES 3.3kohm C505,506 2 2 2 C-CAP 47pf 50V 215510N C511,512 2 2 M-CAP 0.0012uf 5% 50V 222154J C515,516 2 2 2 M-CAP 0.0068uf 5% 50V 222154J C519,520 2 2 2 RES 15kohm 5% 2W 328334J R503,504 2 2 2 RES 18kohm 5% 2W 328334J R503,504 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 3.3kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,516 2 2 2 RES 18kohm 5% 2W 328334J R515,516 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R513,514 2 2 2 RES 18kohm 5% 2W 328334J R515,516 2 2 2 RES 18kohm 5% 2W 328334J R515,516 2 2 2 RES 18kohm 5% 2W 328334J R515,516 2 2 2 RES 18kohm 5% 2W 328334J R515,516 2 2 2 RES 18kohm 5% 2W 328334J R515,516 2 2 2 RES 18kohm 5% 2W 328334J R515,516 2 2 2 RES 18kohm 5% 2W 328334J R515,516 2 2 2 RES 2kohm 5% 2W 328334J R515,516 2 2 2 RES 2kohm 5% 2W 328334J R515,516 2 2 2 RES 2kohm 5% 2W 328334J R515,516 2 2 2 RES 2kohm 5% 2W 328334J R515,516 2 2 2 RES 2kohm 5% 2W 328334J R515,516 2 2 2 RES 2kohm 5% 2W 328334J R515,516 2 2 2 RES 2kohm 5% 2W 328334J R515,516 2 2 2 RES 2kohm 5% 2W 328334J R515,516 2 2 2 RES 2kohm 5% 2W 328334J R515,716 2 2 2 RES 2kohm 5% 2W 328334J R515,716 2 2 2 RES 2kohm 5% 2W 328334J R515,716 2 2 2 RES 2kohm 5% 2W 328334J R515,716 2 2 2 RES 2kohm 5% 2W 328334J R515,716 2 2 2 RES 2kohm 5% 2W 328334J R515,716 2 2 2 RES 2kohm 5% 2W 328334J R515,716 2 2 2 RES 2kohm 78,717,712 2 2 2 RES 2kohm 87,717,712 2 2 2 RES 2kohm 87,717,714 2		%W	
BETA 50/s: PREAMPLIFIER PWB ASSEMBLY (TONE CONTROL SECTION) 401 VR3.4 2 2 2 VR 100kohm (C) x 2 - bass/treble 4321430 C501,502 2 2 2 E-CAP 3.3uf 50V 211513S C503,504 2 2 2 C-CAP 47pf 10% 50V SL 232470K C505,506 2 2 2 C-CAP 47pf 10% 50V SL 232509D R705,706 2 2 2 RES 3.3kohm R803,504 2 2 2 RES 3.3kohm 5% WW 328332J R503,504 2 2 2 RES 18kohm 5% WW 328332J R503,504 2 2 2 RES 18kohm 5% WW 328332J R515,512 2 2 RES 18kohm 5% WW 328332J R515,516 2 2 RES 18kohm 5% WW	5%	%W	
BETA 50/s: PREAMPLIFIER PWB ASSEMBLY (TONE CONTROL SECTION) 401 VR3, 4 2 2 2 VR 100kohm (C) x 2 - bass/treble 4321430 IC501 1 1 1 IC NJM2043D C501,502 2 2 ECAP 3.3uf 50V 211513S C503,504 2 2 2 CCAP 47pf 10% 50V SL 232470K C505,506 2 2 2 CCAP 5pf ± 0.5pf 50V SL 232470K C511,512 2 2 M-CAP 0.0012uf 5% 50V 222173J C513,514 2 2 2 M-CAP 0.0012uf 5% 50V 222173J C517,518 2 2 2 M-CAP 0.0068uf 5% 50V 222163J C619,502 2 2 2 RES 15kohm 5% WW 328133J R501,502 2 2 2 RES 330kohm 5% WW 328334J R501,502 2 2 2 RES 33kohm 5% WW 328334J R501,512 2 2 2 RES 33kohm 5% WW 328332J R505,506 2 2 2 RES 12kohm 5% WW 328133J R511,512 2 2 RES 12kohm 5% WW 328133J R511,512 2 2 RES 12kohm 5% WW 328133J R511,514 2 2 RES 12kohm 5% WW 328133J R511,515 2 2 2 RES 33kohm 5% WW 328334J R511,515 2 2 2 RES 12kohm 5% WW 328133J R511,516 2 2 2 RES 12kohm 5% WW 328133J R511,516 2 2 2 RES 12kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 33kohm 5% WW 328133J R511,516 2 2 2 RES 32kohm 5% WW 328332J R511,512 2 2 RES 33kohm 5% WW 328332J R51	5%		
## R425,426 2 2 2 RES 1600mm R427,428 2 2 2 RES 1600mm R427,428 2 2 2 RES 100kohm R429,430 2 2 2 RES 10kohm R42	5%	%W	
(TONE CONTROL SECTION) 401 VR3, 4 2 2 2 VR 100kohm (C) x 2 - bass/treble	5%	1/4W	
(TONE CONTROL SECTION) 401 VR3, 4 2 2 2 VR 100kohm (C) x 2 - bass/treble 4321430 (IC501 1 1 1 IC NJM2043D 518220S C701,702 2 2 2 C-CAP 47pf 105 C501,502 2 2 2 E-CAP 3.3uf 50V 211513S C503,504 2 2 2 C-CAP 47pf 10% 50V SL 232470K C505,506 2 2 2 C-CAP 5pf ± 0.5pf 50V SL 232470K C507-510 4 4 4 BP-CAP 1uf 50V 215510N C511,512 2 2 2 M-CAP 0.027uf 5% 50V 222154J C513,514 2 2 2 M-CAP 0.0012uf 5% 50V 222154J C515,516 2 2 2 M-CAP 0.0012uf 5% 50V 222164J C519,520 2 2 2 BP-CAP 3.3uf 50V 215513N 409 VR2 1 1 1 VR 100kohm (B 603,504 2 2 2 RES 3.9kohm 5% WW 328354J R509,500 2 2 2 RES 3.9kohm 5% WW 328354J R509,510 2 2 RES 3.9kohm 5% WW 328354J R509,510 2 2 RES 3.9kohm 5% WW 328334J R511,512 2 2 RES 3.8kohm 5% WW 328332J C707,708 2 2 2 C-CAP 47pf 10 R511,512 2 2 RES 3.8kohm 5% WW 328334J R511,512 2 2 RES 3.8kohm 5% WW 328332J C707,708 2 2 2 C-CAP 47pf 10 R511,512 2 2 2 RES 3.8kohm 5% WW 328332J C707,708 2 2 2 C-CAP 47pf 10 R511,512 2 2 2 RES 3.8kohm 5% WW 328332J C703,706 4 4 4 M-CAP 0.047uf R5115,516 2 2 2 RES 3.8kohm 5% WW 328332J C703,708 2 2 2 C-CAP 47pf 10 R511,512 2 2 2 RES 3.8kohm 5% WW 328332J C703,708 2 2 2 C-CAP 47pf 10 R5115,516 2 2 2 RES 3.8kohm 5% WW 328332J C703,708 2 2 2 RES 8.2kohm R515,516 2 2 2 RES 3.8kohm 5% WW 328332J C713,714 2 2 2 RES 8.2kohm R521,522 2 2 RES 3.3kohm 5% WW 328332J C713,714 2 2 2 RES 8.2kohm R713,714 2 2 2 RES 16kohm	5%	1/4W	
VR3, 4	5%	%W	
C501	5%	¼W	
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R521,522 2 2 RES 22kohm 5% ¼W 328223J R709,710 2 2 2 RES 8.2kohm R523,524 2 2 2 RES 330kohm 5% ¼W 328334J R711,712 2 2 2 RES 150kohm R713,714 2 2 2 RES 1kohm	f 5%	50V	
R523,524 2 2 RES 330kohm 5% ¼W 328334J R711,712 2 2 2 RES 150kohm R713,714 2 2 2 RES 1kohm		1/14/	
R713,714 2 2 2 RES 1kohm	5%	%W	
	5%	%W	
P716 718 2 2 2 PES 230kohm	5%	%W	1
1 1, '	5%	%W	
(PUSH SWITCH SECTION) R717~720 4 4 4 RES 5.6kohm	5%	%W	
R721,722 2 2 2 RES 27kohm	5%	%W	
402 S1 1 1 1 Switch, mono push — certridge selector 4042600 R723,724 2 2 2 RES 1kohm	5%	%W	
404 S25,26 1 1 1 Switch, twin push - line mix/muting 4042530 R725,726 2 2 2 RES 5.6kohm	, 5%	%W	
405 S27,28 2 2 2 Switch, mono push — mode/subsonic 4042590 R729,730 2 2 2 RES 33kohm	5%	¼W	
R731,732 2 2 2 RES 5.6kohm	5%	%W	
(TERMINAL SECTION) R733,734 2 2 2 RES 560ohm	5%	%W -	
R735,736 2 2 2 RES 68kohm	5%	¼W	
406 1 1 1 Terminal, RCA phono pin jack — 2P x 3 4446050 R737~740 4 4 4 RES 56ohm	5%	¼W	
407 5 5 5 Terminal, RCA phono pin jack - 2P x 2 4444120			
R101~106 6 6 6 RES 1meq.ohm 5% 1/W 328105J			
R109,110 2 2 2 RES 1meg.ohm 5% ¼W 328105J			

PARTS ORDERING PROCEDURE ----- DO NOT USE THE "REFERENCE" number and "SYMBOL" number. (these are control # for the factory only). Include in any order: a. Part number b. Part description c. Model number. (any of the above lacking from an order may delay shipment of that order.)

REF.	SYMBOL	TYPE ⁺ DESCRIPTION ⁺⁺	PART
No.	No.	WEV	No.
		(CX NR SECTION)	,
	IC901	1 1 1 IC HA-12044	5182248
	Q804	1 1 1 TR 2SC1815 (Y or GR)	512107S
	Q805	1 1 1 TR 2SA1015 (Y)	510102S
	ZD803,804	2 2 Zener diode RD9.1EB2	502055S
	C816,817	2 2 2 E-CAP 22uf 10V 2 2 2 E-CAP 100uf 10V	2111225
)	C818,819 C901,902	2 2 2 E-CAP 100uf 10V 2 2 2 E-CAP 10uf 16V	211130S 211220S
	C903,904	2 2 2 C-CAP 150pf 10% 50V SL	232151K
	C905,906	2 2 2 E-CAP 2.2uf 50V	2115125
	C907,908	2 2 2 M-CAP 0.068uf 5% 50V	222683J
	C909	1 1 1 E-CAP 0.47uf 50V	2115058
	C910	1 1 1 E-CAP 22uf 10V	2111225
	C911	1 1 1 M-CAP 0.1uf 5% 50V	222104J
	R809,812	2 2 2 FP-RES 220ohm 5% %W	328221L
	R810,811	2 2 2 RES 2.7kohm 5% ¼W	328272J
	R905,906 R907,908	2 2 2 RES 470ohm 5% %W 2 2 2 RES 47kohm 5% %W	328471J
	R909~912		328473J
	R913,914		328104J
	R915~918		328471J
	R919.920	4 4 4 RES 47kohm 5% ¼W 2 2 2 RES 150kohm 5% ¼W	328473J 328154J
	R921,922	2 2 2 RES 180kohm 5% ¼W	328184J
	R923	1 1 1 RES 68kohm 5% ¼W	328683J
	R924	1 1 1 RES 6.8kohm 5% 1/4W	328682J
	R925	1 1 1 RES 330ohm 5% ¼W	328331J
* 410		(HEADPHONE AMP SECTION) 1 1 Jack, headphones	4550360
	IC601	1 1 1 IC LA4170	5180895
	C601,602	2 2 2 E-CAP 0.47uf 50V	2115058
	C603,604	2 2 2 E-CAP 220uf 16V	2112325
	C605,606	2 2 2 M-CAP 0.033uf 5% 50V	222333J
	C607,608	2 2 2 E-CAP 22uf 16V	2112225
	C609	1 1 1 E-CAP 100uf 16V	211230S
		(RELAY DRIVE SECTION)	
411	RELAY1	1 1 1 Relay - FBR221D012	1700490
	Q803	1 1 1 TR 2SC2240 (GR or BL)	512102S
	D803,804	2 2 2 Diode GP10-4002	5600668
	D805,806	2 2 2 Diode DS446	501028\$
	ZD802	1 1 Zener diode RD7.5EBI	5020628
	C813	1 1 1 E-CAP 100uf 25V	2113305
	C814	1 1 1 E-CAP 220uf 10V	2111325
	C815	1 1 1 M-CAP 0.001uf 5% 50V	222102J
	R806,807	2 2 2 RES 22kohm 5% 1/4W	200000
	R808	2 2 2 RES 22kohm 5% ¼W 1 1 1 FP-RES,33ohm 5% ¼W	328223J 328330L
	• .	(MIXING AMP SECTION)	
412	VRS	•	
712		1 1 1 VR 100kohm (B) x 2	4321450
	IC301	1 1 1 IC NJM2043D	518220\$
	C301,302	2 2 2 E-GAP 1uf 50V	2115108
	C303,304 C305,306	2 2 2 BP-CAP 1uf 50V 2 2 2 M-CAP 0.0047uf 5% 50V	215510N
	C305,306 C307,308	2 2 2 M-CAP 0.0047uf 5% 50V 2 2 2 E-CAP 33uf 25V	222472J
	C309,310		211323S 232509D
	C309,310	2 2 2 C-CAP 5pf ± 0.5pf 50V SL	232509D

	SYMBOL	Т	ΥP	E+		PART
No.	No.	w	Ε	v	DESCRIPTION++	No.
				-		
					RES 33kohm 5% ¼W	328333
					RES 82kohm 5% ¼W	328823
					RES 120kohm 5% ¼W	328124
	R311,312				RES 560ohm 5% ¼W	328561
	R313,314	2	2	2	RES 100kohm 5% ¼W	328104
		(1	₹F	GI	LATOR SECTION)	
	IC801			1		518221
					•	513131
	Q801 Q802				TR 2SD794 (Q or P) TR 2SB744 (Q or P)	511127
	D801,802	2	2	2	Diode W02	560061
	ZD801				Zener diode RD3,9FB2	502113
ž ė	C801,802				C-CAP 0.01uf 500V	238103
	C803,804				E-CAP 470ut 35V	211435
	C805,806				E-CAP 4.7uf 35V	211415
	C807				E-CAP 10uf 25V	211320
	C808				M-CAP 0.001uf 5% 50V	222102
	C809,810				E-CAP 10uf 25V	211320
	C811	1			E-CAP 470uf 25V	211335
	C812				E-CAP 10uf 16V	211220
						A
	R801				RES 33kohm 5% ¼W	328333.
	R802				RES 3.3kohm 5% ½W	328332.
*	R803,804	2	2	2	RES 15kohm 5% ¼W	328153.
	R805	1	1	1	FP-MO-RES 180ohm 5% 2W	362181
		(0	×	C	LIBRATOR SECTION)	
	VR6,7	2	2	2	VR 50kohm (A)	4310810
	LED901	1	1	1	LED PRG5114S — red and green	5060800
	R903,904	2	2	2	RES 18kohm 5% %W	328183.
	18					
	7					
	BETA 50/	s:	SE	ELI	CTOR PWB ASSEMBLY	
01	S2~S9	2	2	2	Switch, tetra push — input selector	4042540
02	S10~S12				Switch, tri push — line out selector	4042560
03	S13~S15	1			Switch, tri push – CX-NR	4042550
04		3	3	3	Switch, tri push — sound processor/tone	4042570
05					LED GL-5ND5 — red and green LED LN31GCPH — green	5060790 5060730
06		-	-	-		
06	R201	1	1	1	RES 1800hm 5% 1/4W	328181.
06					RES 180ohm 5% ¼W RES 470ohm 5% ¼W	
06						
06						
06						328181J 328471J
06						
.06						
06						
06						
06						
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SEMICONDUCTOR DATA

TRANSISTORS

† NOTES

Pianer	
Point-contact	
Triple-diffuse	ď

			MAXIMI (1		E	LECTRIC	AL CH	ARACTE	RISTICS 1							ified)					
DEVICE	APPLICATIONS		Collector- to-Base	Emitter- to-Base	Collector Current	Collector Dissipa-	Junction Tempera-	Collector C		Static F	orward-C nsfer Rat		Collecto Saturatio			Gain-Band	VCE		Output Capaci- tance	Others	FACTURER
TYPE		TURE	Voltage VCBO (V)	Voltage VEBO (V)	IC (mA)	PC (mW)	TJ (°C)	ICBO (uA)	VCB (V)	hFE	VCE (V)	Ic (mA)	VCE(set) (V)	IC (mA)	iB (mA)	fab* (MHz)	Vca*	(mA)	Cob (pF)		
2SA1015 (Y)	AF, General	PNP Si-E	-50	-5	-150	400	125	-0.1 max.	50	120 ~ 240	-6	-2	-0.3 max.	-100	-10	90 min.	-10	-1*	7 max.		TOSHIBA
2SB744 (P, Q)	AF, Power amp.	PNP Si-E	-70	-5	-3A	1W	150	-1 max.	-45	100 ~ 320	-5	-500	-2 max.	-1.5A	-150	45	-5	-100°	60		NEC
2SC1815 (Y, GR)	AF, General	NPN Si-E	60	5	150	400	125	0.1 max.	60	120 ~ 400	6	2	0.25 max.	100	10	80 min.	10	1.	3 max.		TOSHIBA
2SC2240 (GR, BL)	AF, Low noise	NPN Si-E	120	5	100	300	125	0.01 max.	120	200 ~ 700	6	2	0.3 max.	10	1	100	6	1.	3		TOSHIBA
2SD794 (P, Q)	AF, Power amp.	NPN Si-E	70	5	3A	1W	150	1 max.	45	100 ~ 320	5	500	2 max.	1.5A	150	60	6	100*	40		NEC

FIELD EFFECT TRANSISTORS

			MAXIMUM RATINGS Absolute-Maximum Values: (TA = 25°C unless otherwise specified)								ELEC	TRIC	AL CHARA	CTER	STICS Ty	picel V	/alues: (T _A	- 25°	C unless of	herwis	,				
DEVICE APPLICA-		STRUC-		Source	Current			Channel Temper- ature	Gate Le Currer		Gate to D Breakdo Voltag	Wn	Drain Cur	rent .	Gate to Se Cutoff Vo		Forward Tr Admitta				Power Gain (Common Source)		Noise Figure		MANU- FACTURER
1172	HONS	TORE		VGSO		ID (mA)	PD (mW)	Tch (°C)	. Test Conditions	IGSS (nA)	Test Conditions	Vieri GDO (V)	Test Conditions	IDSS (mA)	Test Conditions	VGS (off) (V)	Test Conditions	(mg)	Test Conditions	Crss (pF)	Test Conditions	GPS (dB)	Test Conditions	NF (dB)	
25K117 (GR)	AF, Low noise	Si N-channel Junction			10		300		V _{GS} = -30V V _{DS} = 0		V _{DS} = 0	-60	V _{DS} - 10V V _{GS} - 0	2.6 ~ 6.5			V _{DS} = 10V V _{GS} = 0 f = 1kHz		V _{DS} = 10V I _D = 0 f = 1MHz	3			V _{DS} = 10V Rg = 1kΩ I _D = 0.5mA f = 1kHz	1	TOSHIBA
2SK170 (GR, BL)	AF, Low noise	Si N-channel Junction	-40		10		400	125	V _{GS} = -30∨ V _{DS} = 0		V _{DS} = 0		V _{DS} = 10V V _{GS} = 0	2.6		1	V _{DS} = 10V V _{GS} = 0 f = 1kHz	22	V _{DG} = 10V I _D = 0 f = 1MHz	6		ŀ	V _{DS} = 10V R ₀ = 1kΩ I _D = 1mA f = 1kHz	0.5	TOSHIBA

DIODES, LEDS

						M RATI				olues:			Values:)						
DEVICE			Reverse	(TA = 25°C unless otherwise specified) Reverse Peak Reverse Peak Peak Average Forward Junction Total Fo											d Voltage		e Current		MANU-
TYPE	APPLICATIONS	STRUCTURE [†]	Surge	Reverse Voltage		Forward	Forwerd		Surge	Temperature	Power Dissipation	lfmin	Test Condition	V≠max	Test Condition	lRmax	x Test Condition	Others	FACTURER
			VRsurge (V)	VRM (V)	VR (V)	VFM (V)	IFM (mA)	IO (mA)	IF surge	T,	PD (mW)	(mA)	VF (V)	(V)	IF (mA)	(uA)	VR (V)		
D\$446	Switching	Si-EP		105	100		500	200	0.7	176				0.65	1.5	0.1	100		SANYO
GP10- 4002	Rectifier	Si-DJ		100				1A	30	176				1.1 -	1A	5			GENERAL INSTRUMENT
W02	Rectifier	Si-DJ (Bridge)	200	200		140		1.5A	50	150	<u> </u>			1	1A	10			GENERAL INSTRUMENT
LN31G-	Indicator (green)	GeP			4		40			85	90			2.8	20	10	4		MATSUSHITA
GL- 5ND5	Indicator (red/green)	Gap/GaAsP	(red)				50	ļ -		86	70 85			2.4	20	10	4		SHARP
PRG- 51148	Indicator (red/green)	GeP/GeP	(red)			1	100	 		85	75 125			2.5	10				STANLEY

ZENER DIODES

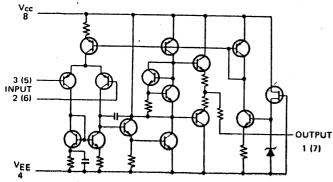
			MAXIMUM RATINGS Absolute - Maximum Values: (TA = 25°C unless otherwise specified)				ELECTRICAL CHARACTERISTICS Typical Values: (T _A = 25°C unless otherwise specified)													
TYPE APPLICATIONS		STRUCTURE [†]	Total Power Dissipation	Zener Current	Junction Temperature		Zener Vz	Voltag	Test Conditions		_	Test Conditions	Tempe		Test Conditions		Test Conditions	Others	FACTURER	
			PD (mW)	Iz (A)	T _J	MIN (V)	TYP (V)	MAX (V)	lz (mA)	TYP (S)	MAX (Ω)	Iz (mA)	TYP rs/ci	MAX (%/°C)	lz (mA)	MAX (µA)	VR (V)			
RD3.9- EB2	Regulator	Si-J	400		175	3.89		4.16	20		50	20				10	1		NEC	
RD7.5- EB1	Regulator	Si-J	400		176	6.85		7.22	20		10	20				2	4		NEC	
RD9.1- EB2	Regulator	Si-J	400		176	8.67		9.01	20		10	20				2	6		NEC	
RD3.9- F82	Regulator	Si-J	1000	,	175	3.88		4.15	40		15	40				40	1		NEC	

INTEGRATED CIRCUIT NJM2043D

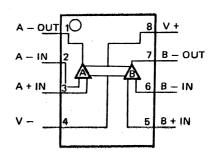
FUNCTION/MANUFACTURER -

■ Dual Pre-amplifier/JRC

EQUIVALENT CIRCUIT



CONNECTION INFORMATION (TOP VIEW)

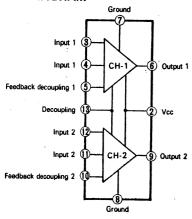


INTEGRATED CIRCUIT LA4170

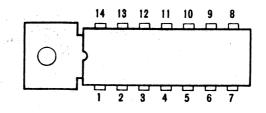
FUNCTION/MANUFACTURER

■ Dual Headphone Amplifier/Sanyo

BLOCK DIAGRAM



CONNECTION INFORMATION (TOP VIEW)

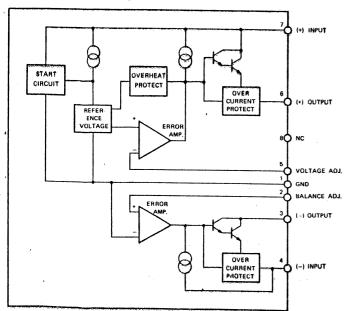


INTEGRATED CIRCUIT M5230L

FUNCTION/MANUFACTURER

■ Voltage Regulator/Mitsubishi

BLOCK DIAGRAM



CONNECTION INFORMATION (SIDE VIEW)

